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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,529	12/28/2001	Donald K. Belcher	71542	7354

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EXAMINER

MILORD, MARCEAU

ART UNIT PAPER NUMBER

2682

DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/033,529

Applicant(s)

BELCHER ET AL.

Examiner

Marceau Milord

Art Unit

2682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-26, 34 and 35 is/are allowed.
- 6) ☒ Claim(s) 27-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 27-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belcher et al (US Patent No 5995046) in view of Sandhu et al (US Patent No 6438389 B1).

Regarding claim 27, Belcher et al discloses a wireless local area network system (fig. 1) comprising: a plurality of access point stations that receive and transmit communication signals within a wireless local area network (col. 10, line 44- col. 11, line 29); a processor operatively connected to each of the access point and operative for processing the access point communication signals received from a mobile station (30 of fig. 1) in communication therewith and weighting delayed versions of at least one interference signal by controlling amplitude and phase with weighted functions  $W_1, W_2 \dots W_n$ , (col. 12, line 41- col. 13, line 61) and summing any resultant (col. 14, line 28- col. 15, line 17).

However, Belcher et al does not specifically disclose the step of summing any resultant weighted replicas to determine an approximation of the dispersed interference for canceling interference

On the other hand, Sandhu et al, from the same field of endeavor, discloses a wireless communication system that has several antennas that are electronically controlled to form N distinct beams. Each one of the N beams is periodically measured for signal quality for each mobile subscriber. Furthermore, a computer stores and compares the signal quality measurements. The two best beams are selected using switches controlled by the computer. The best beams are frequency down converted, digitized and sent to a combiner, which combines the best beams to produce a signal having exceptional quality (fig. 1, figs. 3-6; col. 3, lines 44- 63; col. 5, line 11- col. 6, line 59). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Sandhu to the communication the system of Belcher in order to select the highest quality beams for each subscriber unit, and communicates with each subscriber using the best beams.

Regarding claim 28, Belcher et al as modified discloses a wireless local area network system (fig. 1) comprising, an interference detector and controller circuit that provide a control loop for minimizing the total amount of interference (col. 11, lines 8-40).

Regarding claim 29, Belcher et al as modified discloses a wireless local area network system (fig. 1) comprising, a system antenna and an interference-receiving antenna directed for receiving an interference signal (fig. 6; col. 13, lines 19-61)

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Regarding claim 30, Belcher et al as modified discloses a wireless local area network system (fig. 1) comprising, two system antennas spaced in diversity (fig. 6; col. 12, line 54- col. 13, line 17; col. 13, lines 33-61).

Regarding claim 31, Belcher et al as modified discloses a wireless local area network system (fig. 1), wherein said mobile station comprises a mobile access point station that receives and transmits communication signals within the wireless local area network (col.

Regarding claim 32, Belcher et al as modified discloses a wireless local area network system (fig. 1), wherein said mobile station comprises a mobile device in communication with an access point station (col. 12, line 41- col. 13, line 17).

Regarding claim 33, Belcher et al as modified discloses a wireless local area network system (fig. 1), wherein said mobile device comprises a tag transmitter associated with an object (col. 13, line 38- col. 14, line 36).

#### Allowable Subject Matter

2. Claims 1-26 are allowed.

#### Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sandhu et al US Patent No 6438389 B1 discloses a wireless communication system with adaptive beam selection.

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Tsutsui et al US Patent No 6385181 B1 discloses an array antenna system of a wireless base station in CDMA mobile communication that has a beam former for forming a plurality of electric beam.

Martek et al US Patent No 6351237 B1 discloses a polarization and angular diversity among antenna beams.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marceau Milord whose telephone number is 703-306-3023. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 703-308-6739. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MARCEAU MILORD

Marceau Milord

Examiner

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